



UK & ROI ACUTE STROKE SIMULATION COURSE

Anatomy and stroke syndromes

Dr Ingrid Kane
September 2023

Why is anatomy important



- Do the history, symptoms and signs fit with what you might expect to see on imaging?
- Guides potential investigations eg carotid imaging to look for stenosis; cardiac imaging etc

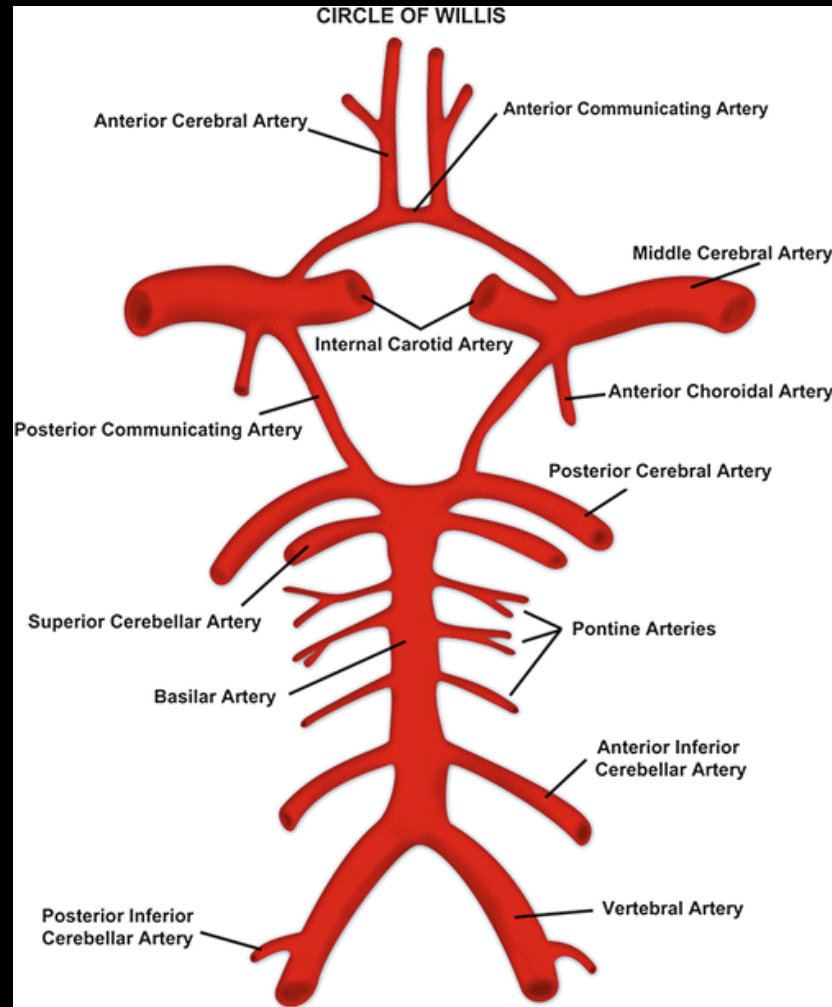
My advice

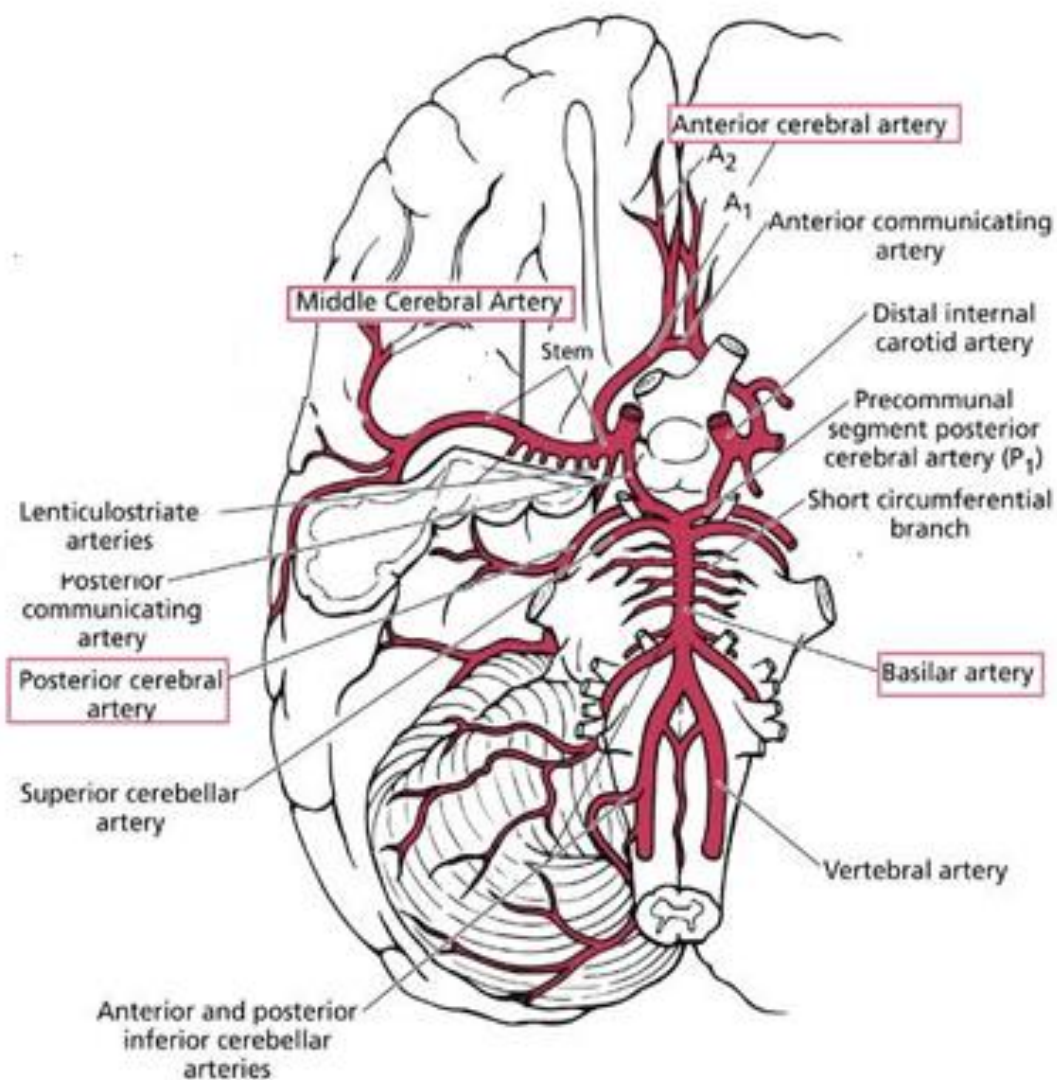
- Keep it simple
- Try not to overcomplicate things
- Broadly looking at anterior and posterior stroke syndromes

Anatomy – Circle of Willis



UK AND ROI ACUTE STROKE
SIMULATION COURSE





Stroke syndromes



- A collection of symptoms that helps identify which part of the brain has been affected
- Bamford/Oxford classification is a system that is widely used
 - 4 broad categories of stroke

	SHORT NAME	LOCATION	VESSEL	CRITERIA
TOTAL ANTERIOR CIRCULATION STROKE	TACS	Large cortical	ACA or MCA	TACS criteria (3/3)
PARTIAL ANTERIOR CIRCULATION STROKE	PACS	Cortical	ACA or MCA	TACS criteria (2/3)
LACUNAR STROKE	LACS	Subcortical	Deep perforating arteries	Lacunar syndrome
POSTERIOR CIRCULATION STROKE	POCS	Cortical, cerebellum, brainstem	Vertebrobasilar arteries	Posterior syndrome

ACA: anterior cerebral artery; MCA - middle cerebral artery

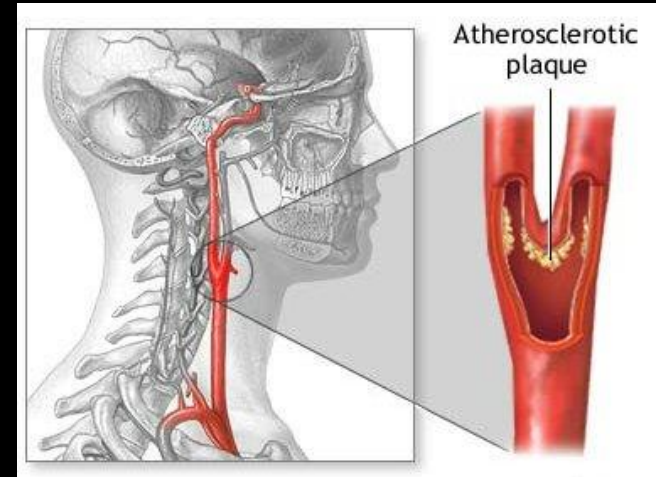
TACS criteria: (1) unilateral weakness +/- sensory deficit within the face and/or arm and/or leg. (2) Homonymous hemianopia. (3) Higher cerebral dysfunction

Lacunar syndromes: (1) pure motor hemiparesis. (2) pure sensory. (3) ataxic hemiparesis. (4) Dysarthria-clumsy hand syndrome. (5) sensorimotor

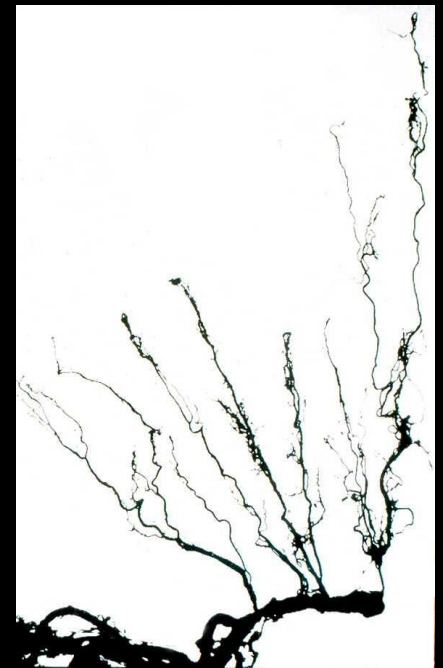
Posterior syndrome: (1) Brainstem or cerebellar syndrome. (2) loss of consciousness. (3) Isolated homonymous hemianopia

Thinking about the stroke syndrome can help you think about the cause of stroke

- Cortical (TACS/PACS)
 - Atherosclerotic disease
 - Cardiac source of embolism
- Lacunar (LACS)
 - Intracranial small vessel disease
- Rare causes



Lenticulostriate
arteries arising from
the trunk of the
middle cerebral artery



Bamford classification: prognosis

Prognosis at 1 year	TACS	PACS	LACS	POCS
Dead	60 %	15 %	10 %	20 %
Dependant	35 %	30 %	30 %	30 %
Independent	5 %	55 %	60 %	50 %
Recurrence 1 year	5 %	20 %	10 %	20 %



**However, things are
not always that clear
cut**

Symptoms of definite carotid territory ictaemia

- Monocular visual loss (all or part of visual field)
- Language disturbance (dominant hemisphere)

Symptoms indicating definite vertebrobasilar ischaemia

- Tetraparesis
- Diplopia
- Vertigo
- Cortical blindness
- Cerebellar ataxia

Symptoms which may be due to carotid or vertebrobasilar ischaemia

- Unilateral weakness
- Unilateral sensory disturbance
- Dysarthria
- Homonymous hemianopia
- Unsteadiness/ataxia
- Dysphagia

Finally



- A knowledge of basic cerebral anatomy is important to help localise deficit and plan appropriate investigations
- But remember not all strokes fit neatly into the syndromes we regularly use